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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,248	09/22/2003	Sadayuki Iwai	242684US2	9512

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EXAMINER	
GLEITZ, RYAN M	

ART UNIT	PAPER NUMBER
2852	

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/666,248	IWAI ET AL.
	Examiner	Art Unit
	Ryan Gleitz	2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,25-32 and 46-51* is/are rejected.

7)☒ Claim(s) *12-24 and 33-45* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 September 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *05/05/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to because "WALL OF ELECTRICAL" in figure 3A should be --WALL OF ELECTRICAL FIELD-- or a similar term.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 5-8, 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamiya et al. (JP 08-030119) in view of Inoue (JP 2002-091252).

Tamiya et al. disclose an image forming apparatus including conductors (53, 54) shown in figure 7 that prevent transfer dust from shifting to a photoreceptor at the time of primary transfer (abstract, lines 1-2), and prevent toner from transferring from the image bearing (51) element to the transfer medium (52) at an upstream of a contact area between the image bearing element (51) and the transfer medium. Referring to figure 2, upstream conductor (53) is biased with a negative voltage, and downstream conductor (54) is biased with a positive voltage. The arrows near element 56 on the upstream (left) side show that toner is not transferred on the upstream side. The arrows near element 56 on the downstream (right) side show that toner is transferred on a downstream side including the toner nip portion, which is indicated by Lnip in the figure.

Therefore, Tamiya disclose both controlling a surface potential of a transfer medium so that toner is not transferred at an upstream of a contact area, and controlling a surface potential of a transfer medium so that the toner is transferred at a toner nip portion.

Additionally, a plurality of toner images of different colors are transferred from the image bearing element (51) repeatedly to the transfer medium (52) to form a superposed toner image on the transfer medium (abstract, lines 2-5).

Regarding claim 2, the transfer medium (52) is either of a belt and a drum, further comprising: transferring the superposed toner image on to a recording medium, as shown in figure 11.

Regarding claims 5 and 6, the image forming method includes forming an electrostatic latent image on an image bearing element and forming a toner image from the electrostatic latent image using toner.

Regarding claim 47 and 48, a secondary transfer unit (44) and a fixing unit (20) are shown in figure 11.

Tamiya et al. do not disclose neutralizing the surface potential of the image bearing element.

However, Inoue discloses a similar image forming apparatus including an destacitizing radiation device (8), which is a light for optically neutralizing a surface potential of an image bearing element (1) that carries a toner image.

Regarding claim 7, the surface potential of the image bearing element (1) is neutralized by irradiating a light (abstract, line 7).

Regarding claim 8, the neutralization by the light irradiation is carried out using a light emitting device, wherein the light emitting device includes a light emitting diode [0076], and the surface potential of the image bearing element is controlled by controlling an amount of the neutralization by adjusting an amount of a light emission based on a relation between the amount

of a light emission and a current flowing in or a voltage applied to the light emitting device [0076]-[0077].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming apparatus and method of Tamiya et al. with the destaticizing radiation device of Inoue to neutralize the surface potential of the image bearing element and erase the memory of the image bearing element, shortening the first copy time (abstract, lines 1-3, 9-11).

Claims 5, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamiya et al. (JP 08-030119) in view of Koizumi (US 4,348,098).

Tamiya et al. disclose the image forming apparatus and method above, but do not disclose neutralizing the surface potential of the image bearing element.

However, Koizumi discloses a flash exposure lamp (7) and a corona charger (6). The toner image is charge until a relative potential difference of substantially zero is reached (col. 3, lines 3-7), which reads on the surface potential of the image bearing element is neutralized by supplying ions emitted from an ion generating device, including either a corotron or a scorotron.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming apparatus and method of Tamiya et al. with the neutralizing device of Koizumi to facilitate the release of toner from the image bearing element (col. 3, lines 11-12).

Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamiya et al. (JP 08-030119) in view of Iwata (JP 2002-023574)

Tamiya et al. disclose the image forming apparatus and method above, but do not disclose neutralizing the surface potential of the image bearing element.

However, Iwata discloses an image forming device including a neutralizing lamp (27) for neutralizing a surface of the image bearing element (52), and charge neutralization takes place after forming the toner images on the image bearing element (52) and before transferring the toner images to a transfer medium.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming method of Tamiya et al. with the neutralizing lamp taught by Iwata to allow for the uniform transfer of a toner image and to suppress toner scatter (abstract, line 1-5).

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamiya et al. (JP 08-030119) in view of Inoue (JP 2002-091252) as applied to claims 1, 2, 5-8, 47 and 48 above, and further in view of Hujii et al. (US 6,025,108).

Tamiya et al. and Inoue disclose the image forming apparatus and method above, but do not disclose the roundness of the toner.

However, Hujii et al. disclose an image forming method using a toner having a roundness equal to or more than 0.94 (abstract, line 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming method of Tamiya et al. and Inoue to use the toner taught by Hujii et al. to prevent the collection of the toner on the bottom of the development housing, preventing the rising of the driving torque of the rollers (abstract, lines 11-16).

Claims 3, 4, 26-29 and 49-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamiya et al. (JP 08-030119) in view of Inoue (JP 2002-091252) as applied to claims 1, 2, 5-8, 47 and 48 above, and further in view of Aoki et al. (JP 2002-174934).

Tamiya et al. and Inoue disclose the image forming method and apparatus above but do not disclose a plurality of image bearing elements, cleaning units for the image bearing elements, and a toner recycling unit.

However, Aoki et al. disclose an image forming apparatus including a plurality of image bearing elements (40), cleaning units (63), and a toner recycling unit (80).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming method and apparatus of Tamiya et al. and Inoue with the plurality of image bearing elements of the tandem image forming device of Aoki et al. because tandem devices are well known to dramatically improve the speed and throughput of the device.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming method and apparatus of Tamiya et al. and Inoue with the cleaning unit and toner recycling unit of Aoki et al. to improve the toner efficiency of the machine, reducing waste and cost.

Claims 26, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamiya et al. (JP 08-030119) in view of Koizumi (US 4,348,098) as applied to claims 5, 9, and 10 above, and further in view of Aoki et al. (JP 2002-174934).

Tamiya et al. and Koizumi disclose the image forming method and apparatus above but do not disclose a plurality of image bearing elements.

However, Aoki et al. disclose an image forming apparatus including a plurality of image bearing elements (40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming method and apparatus of Tamiya et al. and Koizumi with the plurality of image bearing elements of the tandem image forming device of Aoki et al. because tandem devices are well known to dramatically improve the speed and throughput of the device.

Claim 26 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamiya et al. (JP 08-030119) in view of Iwata (JP 2002-023574) as applied to claims 5 and 11 above, and further in view of Aoki et al. (JP 2002-174934).

Tamiya et al. and Iwata disclose the image forming method and apparatus above but do not disclose a plurality of image bearing elements.

However, Aoki et al. disclose an image forming apparatus including a plurality of image bearing elements (40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming method and apparatus of Tamiya et al. and Iwata with the plurality of image bearing elements of the tandem image forming device of Aoki et al. because tandem devices are well known to dramatically improve the speed and throughput of the device.

Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamiya et al. (JP 08-030119) in view of Inoue (JP 2002-091252) as applied to claims 1, 2, 5-8, 47 and 48 above, and further in view of Hujii et al. (US 6,025,108) and Aoki et al. (JP 2002-174934).

Tamiya et al. and Inoue disclose the image forming apparatus and method above, but do not disclose the roundness of the toner.

However, Hujii et al. disclose an image forming method using a toner having a roundness equal to or more than 0.94 (abstract, line 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming method of Tamiya et al. and Inoue to use the toner taught by Hujii et al. to prevent the collection of the toner on the bottom of the development housing, preventing the rising of the driving torque of the rollers (abstract, lines 11-16).

Tamiya et al. and Inoue do not disclose a plurality of image bearing elements.

However, Aoki et al. disclose an image forming apparatus including a plurality of image bearing elements (40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming method and apparatus of Tamiya et al. and Inoue with the plurality of image bearing elements of the tandem image forming device of Aoki et al. because tandem devices are well known to dramatically improve the speed and throughput of the device.

Allowable Subject Matter

Claims 12-23 and 33-44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 24 and 45 are objected to for the informalities above and as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome the objections above and in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed 5 May 2005 have been fully considered but they are not persuasive.

Applicant submits that's Tamiya fails to disclose controlling a surface potential of a transfer medium so that toner is not transferred at an upstream of a contact area while controlling a surface potential of a transfer medium so that toner is transferred at a toner nip portion.

Referring to figure 2 of Tamiya, upstream conductor (53) is biased with a negative voltage, and downstream conductor (54) is biased with a positive voltage. The arrows near element 56 on the upstream (left) side show that toner is not transferred on the upstream side. The arrows near element 56 on the downstream (right) side show that toner is transferred on a downstream side including the toner nip portion, which is indicated by Lnip in the figure.

Therefore, Tamiya disclose both controlling a surface potential of a transfer medium so that toner is not transferred at an upstream of a contact area, and controlling a surface potential of a transfer medium so that the toner is transferred at a toner nip portion.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Gleitz whose telephone number is (571) 272-2134. The examiner can normally be reached on Monday-Friday between 9:00AM and 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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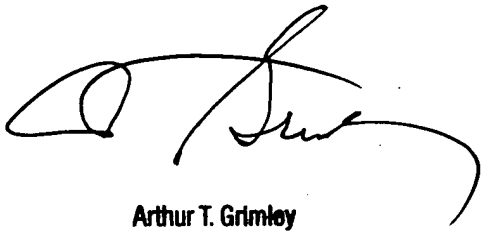

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